

AMENDMENTS TO THE CLAIMS

Please cancel Claims 8 and 9, without prejudice.

Please amend Claims 1, 3, 4, 6 and 7 as follows.

1. (Currently amended) A method for separating and recovering oxygen-rich air from the air, comprising:

providing a gas separation membrane module where

(i) a laminate comprising a permeate-side spacer for forming a permeate gas channel communicated with a hollow section in a core tube for collecting and discharging a permeate gas and two flat-film gas separation membranes sandwiching the spacer and

(ii) a feed-side spacer for forming a feed gas channel are spirally wound around the core tube such that the laminate and the feed-side spacer are alternately superimposed, wherein a thickness ratio of the permeate-side spacer to the feed-side spacer is 1:2 to 1:10; and

vacuuming the hollow section of the core tube to 95 kPaA or less by vacuuming means while feeding the air into the feed gas channel by ~~air feed means such that a fan or a blower having such a capacity that~~ a maximum feed-air flow rate and a maximum static pressure divided by an effective membrane area of the gas separation membrane are $100 \text{ m}^3/\text{min} \cdot \text{m}^2$ or less and 4000 Pa/m^2 or less, respectively, to separate and recover oxygen-rich air from the hollow section of the core tube.

2. (Original) The method as claimed in Claim 1, wherein the gas separation membrane module has a plurality of laminates; each of the laminates comprising a permeate-side spacer for forming a permeate gas channel communicated with a hollow section in a core tube for collecting and discharging a permeate gas and two flat-film gas separation membranes sandwiching the spacer; wherein the laminates are spirally wound around the core tubes together with feed-side spacers for forming feed gas channel such that the laminates and the feed-side spacers are alternately superimposed.

3. (Currently amended) The method as claimed in Claim 1, ~~wherein in the gas separation membrane module, a thickness ratio of the permeate-side spacer to the feed-side~~

~~spacer is 1:2 to 1:10, wherein the air flowing in the feed gas channel has substantially atmospheric pressure.~~

4. (Currently amended) An apparatus for separating and recovering oxygen-rich air, comprising:

(a) a gas separation membrane module where

(i) a laminate comprising a permeate-side spacer for forming a permeate gas channel communicated with a hollow section in a core tube for collecting and discharging a permeate gas and two flat-film gas separation membranes sandwiching the spacer and

(ii) a feed-side spacer for forming a feed gas channel are spirally wound around the core tube such that the laminate and the feed-side spacer are alternately superimposed, wherein a thickness ratio of the permeate-side spacer to the feed-side spacer is 1:2 to 1:10;

(b) ~~air feed means a fan or a blower~~ for feeding the air into the feed gas channel ~~such that, the fan or the blower having such a capacity that~~ a maximum feed-air flow rate and a maximum static pressure divided by an effective membrane area of the gas separation membrane are $100 \text{ m}^3/\text{min}\cdot\text{m}^2$ or less and $4000 \text{ Pa}/\text{m}^2$ or less, respectively; and

(c) vacuuming means whereby the hollow section of the core tube is vacuumed to 95 kPaA or less to separate and recover oxygen-rich air from the hollow section of the core tube.

5. (Original) The apparatus as claimed in Claim 4, wherein the gas separation membrane module has a plurality of laminates; each of the laminates comprising a permeate-side spacer for forming a permeate gas channel communicated with a hollow section in a core tube for collecting and discharging a permeate gas and two flat-film gas separation membranes sandwiching the spacer; wherein the laminates are spirally wound around the core tubes together with feed-side spacers for forming feed gas channel such that the laminates and the feed-side spacers are alternately superimposed.

6. (Currently amended) ~~The method as claimed in Claim 4, wherein in the gas separation membrane module, a thickness ratio of the permeate-side spacer to the feed-side~~

spacer is 1:2 to 1:10. The apparatus as claimed in Claim 4, wherein the fan or blower, and the feed-side spacer are adapted to allow the air with substantially atmospheric pressure to flow in the feed gas channel.

7. (Currently amended) A gas separation membrane module, comprising:
a plurality of laminates; each of the laminates comprising a permeate-side spacer for forming a permeate gas channel communicated with a hollow section in a core tube for collecting and discharging a permeate gas and two flat-film gas separation membranes sandwiching the spacer; wherein the laminates are spirally wound around the core tubes together with feed-side spacers for forming feed gas channel such that the laminates and the feed-side spacers are alternately superimposed,

wherein a thickness ratio of the permeate-side spacer to the feed-side spacer is 1:2 to 1:10, and

wherein the feed-side spacer is adapted to allow air to flow in the feed gas channel with substantially atmospheric pressure when the air is fed by a fan or a blower having such a capacity that a maximum feed-air flow rate and a maximum static pressure divided by an effective membrane area of the gas separation membrane are $100 \text{ m}^3/\text{min m}^2$ or less and 4000 Pa/m^2 or less, respectively,

whereby the module separates and recovers oxygen-rich air from a hollow section by vacuuming the hollow section while feeding the air to a feed gas channel.

- 8-9. (Cancelled)